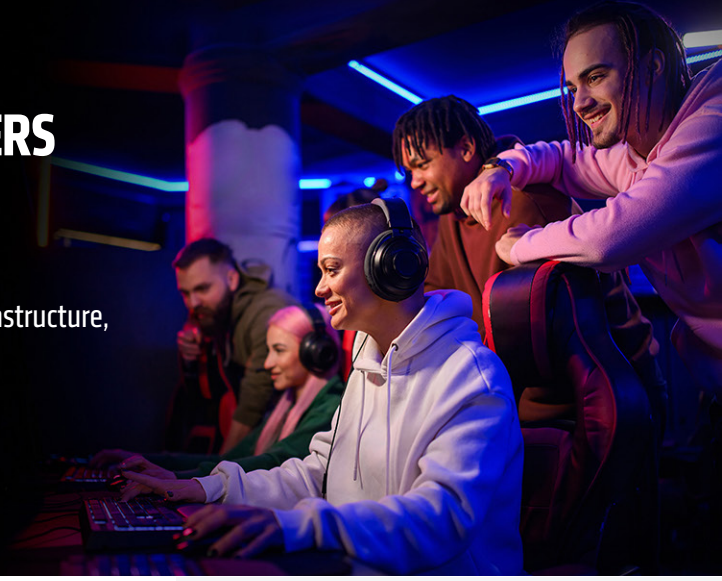
NITRADO SUPERCHARGES GAMING SERVERS WITH AMD PROCESSORS

CASE STUDY

Nitrado gained up to 60% performance increases for its game server infrastructure, reduced energy consumption and lowered costs with AMD CPUs

AMD × NITRADO



Multiplayer online games are incredibly diverse. From sprawling open-world survival games to fast player-versus-player competitions, each title has unique game server requirements. Some games rely on single-core clock speeds for optimal performance; others need a higher core count for parallel tasks. Getting the balance right is critical. In multiplayer gaming, players may be anywhere in the world and milliseconds of response time can mean the difference between victory and defeat. These demands make operating a large game server infrastructure especially challenging, a reality well known by Nitrado. Ultimately, the company turned to AMD and the AMD Ryzen™ and EPYC™ processors to power this full-throttle gaming.

> **"GameFabric, along with Nitrado and Apex Hosting, realized a 50% increase in single-core performance with the AMD Ryzen™ 9 7950X when compared to the competing chipset the AMD processor replaced."**

For nearly 25 years, Nitrado has been a leader in game hosting, alongside its subsidiary, Apex Hosting. Nitrado offers direct-to-consumer server rentals for such popular multiplayer games as Dune: Awakening, DayZ, Minecraft and more. It also operates GameFabric, a multiplayer server orchestration platform optimized for use by game development studios.

After a strategic review of industry directions, Nitrado launched a search for a next-gen CPU architecture that would help it maintain its leadership in performance and value. Finding the right processor for game server infrastructure is more than a technological challenge. The CPU performance affects player retention, competitive integrity and, ultimately, a game's commercial success. Nitrado wanted better single-core performance for latency-sensitive game server tasks, especially important for the GameFabric platform. The company also needed CPUs that could handle the diverse compute needs of the dozens of multiplayer games available on its hosted offering. Reducing energy consumption and costs were also on the list. The AMD Ryzen 9 7950X processor and the AMD EPYC 9474F CPUs met all these demands and more.

MAKING DEVELOPER VISIONS REAL WITH SUPERIOR GAMEPLAY

Nitrado has optimized GameFabric, its game server orchestration platform for studios, for the intense compute needs of serving thousands of concurrent players around the world. Key server-side operations include game state updating, or the tick rate; complex physics calculations; sophisticated AI behavior; real-time collision detection; and rapidly processing network data packets.

INDUSTRY
Hosting

CHALLENGES
Support direct-to-consumer server rentals for multiplayer games and enhance game server orchestration platform for studios while decreasing energy needs and costs

SOLUTION
Deploy AMD Ryzen™ 9 7950X and AMD EPYC™ 9474F processors on bare metal servers

RESULTS
50% increase in performance with the AMD Ryzen™ 9 7950X processor; 60% increase in performance and 20% reduction in power consumption per CPU with servers based on the AMD EPYC™ 9474F CPU

AMD TECHNOLOGY AT A GLANCE
AMD Ryzen™ 9 7950X CPUs
AMD EPYC™ 9474F CPUs

Nitrado delivers high-end game servers advanced by AMD EPYC and AMD Ryzen CPUs.

Any latency or bottlenecks in these areas can hurt the player experience and tarnish a game's reputation because of perceptible lags, inconsistent hit registration, unresponsive AI and overall sluggish gameplay.

> **"The AMD EPYC 9474F processor enables Nitrado to achieve a higher service density on its hardware. By hosting more game instances per server, Nitrado optimizes its revenue-to-cost ratio and delivers better value to customers..."**

Integrating the AMD Ryzen 9 7950X into GameFabric's fleet of bare metal servers unlocked substantial advances in the platform's single-core processing capabilities. Nitrado selected the processor for its 16 high-performance cores, 32 threads and AMD "Zen 4" architecture. The processor on GameFabric servers enables rapid game logic execution and instant responses to player actions, translating into the immersive gaming experiences envisioned by game developers. The upgrade also increased GameFabric's server density, delivering operational savings while boosting performance.

ELEVATING GAMEPLAY STANDARDS FOR PRIVATE PLAYER COMMUNITIES

For its direct-to-consumer offerings, Nitrado and Apex Hosting have deployed both the AMD Ryzen™ processor and the AMD EPYC 9474F CPU. The company determined that the 48 cores and 96 threads in the AMD EPYC processor, with a clock boost up to 3.95 GHz, are ideal for games with substantial RAM requirements, where total throughput and memory capacity are essential. In addition, the AMD EPYC 9474F processor enables Nitrado to achieve a higher service density on its hardware. By hosting more game instances per server, Nitrado optimizes its revenue-to-cost ratio and delivers better value to customers while maintaining strong performance for many different game profiles.

> **"Nitrado and Apex Hosting's servers equipped with AMD EPYC 9474F processors delivered a dramatic 60% increase in single-core performance and an impressive 20% reduction in overall power consumption per CPU..."**

The AMD Ryzen 9 7950X, with boost capabilities up to 5.7GHz, powers Nitrado game servers for titles that are especially sensitive to single-core clock speed. multiplayer games benefit greatly from this high frequency performance, resulting in higher server tick rates, increased instructions per cycle (IPC), more responsive game logic and an overall smoother gaming experience.

MORE PROCESSING POWER DELIVERS SUBSTANTIAL PERFORMANCE GAINS

Nitrado's transition to AMD CPU architecture across its platforms has yielded substantial and quantifiable improvements, directly benefiting the countless gamers who trust Nitrado and Apex Hosting for their game server needs.

GameFabric's AMD Ryzen CPU-based servers empower developers to build immersive play.

Millions of gamers rely on Nitrado's AMD CPU-powered infrastructure for smooth play.

Nitrado and Apex Hosting's servers equipped with AMD EPYC 9474F processors delivered a dramatic 60% increase in single-core performance and an impressive 20% reduction in overall power consumption per CPU compared to the previous older generation competitor chipsets Nitrado used. This substantial decrease in energy use per EPYC processor lowers operations expense and total cost of ownership for Nitrado and reduces the environmental footprint of its large-scale hosting operations. Lower costs also enable Nitrado to offer more competitive pricing.

> **"Integrating the AMD Ryzen 9 7950X into GameFabric's fleet of bare metal servers unlocked substantial advances in the platform's single-core processing capabilities."**

The deployment of AMD processors has also benefited gaming studios that rely on Nitrado's GameFabric platform for managing their game creations. GameFabric, along with Nitrado and Apex Hosting, realized a 50% increase in single-core performance with the AMD Ryzen™ 9 7950X when compared to the competing chipset the AMD processor replaced. This significant group-wide single-core uplift empowers the Nitrado group to offer superior computational power for a broader range of CPU-intensive game titles, directly optimizing server stability across all platforms.

The strategic implementation of AMD Ryzen 9 7950X and AMD EPYC 9474F processors is a milestone in Nitrado's continuous optimization of its game server infrastructure, enabling gamers to enjoy superior online experiences while game developers have the performance they need to create, launch and scale the next generation of immersive online experiences.

Nitrado increased server density with AMD EPYC processors, lowering costs and boosting efficiency.

WANT TO LEARN HOW AMD EPYC PROCESSORS MIGHT WORK FOR YOU?
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amd.com/epycsignup

ABOUT NITRADO

Nitrado is the leading global provider of private game server hosting with over two decades of experience in the industry. Through Nitrado and its subsidiary, Apex Hosting, millions of players and community creators enjoy high-quality, reliable game servers across the game industry's most popular titles. For game studios, Nitrado provides GameFabric, its multiplayer server orchestration platform, and patented, game-specific UDP & TCP DDoS protection through SteelShield™. For more information visit nitrado.net and gamefabric.com.

ABOUT AMD

For more than 50 years AMD has driven innovation in high-performance computing, graphics, and visualization technologies. Billions of people, leading Fortune 500 businesses, and cutting-edge scientific research institutions around the world rely on AMD technology daily to improve how they live, work and play. AMD employees are focused on building leadership high-performance and adaptive products that push the boundaries of what is possible. For more information about how AMD is enabling today and inspiring tomorrow, visit the AMD (NASDAQ: AMD) website, blog, LinkedIn, and X pages.

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